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## SUGGESTIONS FOR GROWTH OF BULBOUS PLANTS IN SCHOOLROOMS AND SCHOOL GARDENS

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The bulbous plants that are best for schoolroom,<sup>1</sup> home, and school garden or lawn uses are tulips, hyacinth, narcissus, crocus, gladiolus, freesia, and amaryllis. Many others may be added to this list by persons experienced in growing plants. There are several varieties of each of the kinds named as, single and double tulips, single and double hyacinths, varieties in color, etc. For work with children it is usually best to use the less specialized and more common forms, since success in growing them is more probable and they are no less interesting, attractive, and instructive.

Any dependable seed salesman can supply these bulbs or they may be ordered direct from one of the large supply houses as Vaughn's Seed Store, Chicago, Ill., or Peter Henderson & Co., New York City, N. Y. Prices will vary with the kind of bulb, also with the particular variety desired. The usual range in price is suggested in connection with the discussion of each kind of bulb. Suggestions for planting are based upon the climate and seasons of the Chicago region.

All of the plants here mentioned thrive best in good loamy soil. If manure is used it should be thoroughly decayed and the soil should be thoroughly mixed. It is best to use soil that has been enriched some time prior to the time of planting in order that no undecayed organic matter may be present. Plant no bruised or defective bulbs since they may become a source of infection of others.

Planting for indoor flowering may be done in earthen pots or in wooden boxes. Care must be taken to secure adequate drain-

<sup>1</sup> These preliminary directions are inserted in advance of the general series of articles on nature-study so that teachers who wish to follow the suggestions of the articles may have suitable material at hand.

age. In general, planting in pots should be done at the same time as in outdoor beds, namely about four or five weeks before the first freezing of the ground is expected, though successful indoor planting may be done at a later period. In all cases after bulbs are properly placed in pots or boxes, water well and place in cold frames, in pits in the ground, or in a dark, cool basement room. Keep moist but not wet by an occasional watering. In this way roots grow from the bulbs and become well established before leaves develop and good strong plants may thus be secured. From the cold frames or basement room the pots may be taken to the schoolroom at any time after six weeks or more, and with proper care good flowering plants should soon be secured. During chilly nights partial or complete protection against low temperature may be secured by covering the plants with heavy paper cones made from newspapers.

1. *Tulip, hyacinth, narcissus, and freesia*.—These bulbs are the most widely used for school garden and indoor work. They cost from ten cents to seventy cents and more per dozen. The above directions cover most of the points necessary for proper growing. In beds or in pots the bulbs should be planted with the tops three inches from the surface. In beds best results are secured by planting so that each bulb is allowed at least eight or nine square inches of earth. In pots closer planting is usual, as two or three bulbs in a six-inch pot. *Narcissus* may be grown in a dish of water with a few stones to serve as supports for the roots.

2. *Crocus*.—Cost, about fifty cents per hundred. This plant is for outdoor planting but often flowers well indoors. Excellent results may be secured by scattering the corms (bulbs) about in the lawn, since they flower early in the spring and appear to best advantage when they come up in irregular distribution. The use of several colors increases their attractiveness. Plant in early November. By use of a stick an inch in diameter make a hole in the sod about three inches deep. Insert the corm with its root end downward and press soil so that it is close upon the bulb. The corms need no further attention and if undisturbed will flower for several years. For indoor growth plant six or eight

bulbs in a four-inch pot in good black soil. Plant so that the tops of the bulbs are  $2\frac{1}{2}$  to 3 inches below the surface, and care for them as suggested in preliminary directions.

3. *Gladiolus*.—Cost, thirty to sixty cents per dozen. These plants are useful for outdoor planting and should be planted in the spring so soon as all freezing is past. Since they grow to a height of two to four feet they appear best, and are best protected from winds, if planted along a fence or wall. A bed a few inches wide should be prepared and the bulbs planted in a row with the tops about three inches from the surface of the soil. The corms should be three inches apart in the row. In the spring the soil should be carefully tilled.

4. *Amaryllis*.—Since these plants cost from twenty-five cents to one dollar and more each they are not recommended for general use, but one or two kept by a room of pupils will prove of value. From November to February or March the pots containing the bulbs should be set in a dark cool place since this is the normal dormant period of the plant. By care the plants may be kept from year to year increasing in vigor and flowering qualities.